

What is claimed is:

1. A purification process for manufacturing a high pure
acarbose uses alcohol for precipitation and separation, a
strongly cation exchange chromatography and an
5 immobilized enzyme affinity chromatography for
purification and purifying an acarbose-containing
fermentation broth to get a high pure acarbose.
2. The purification process of claim 1, wherein the strongly
cation exchange chromatography uses a styrene
10 divinylbenzene copolymer without
methoxymethylmethacrylamide to be a resin matrix.
3. The purification process of claim 1, wherein the enzyme of
the immobilized enzyme affinity chromatography uses α
-amylglucosidase(α -glucoamylase).
- 15 4. The purification process of claim 1, wherein the strongly
cation exchange chromatography uses a cation exchange

Claim 1
103.

4,176,185
+ 5,989,188
(col. 3-4, 5-8)

resin containing 20-200 mg sugars/mL resin.

5. The purification process of claim 2, wherein further comprising ~~a step after the strongly cation exchange chromatography~~ uses a solvent, 0~2.0N ammonia solution,
5 to manufacture a high pure acarbose.

6. The purification process as claim 3, wherein further comprising ~~a step after the immobilized enzyme affinity chromatography~~ uses a solvent, 55~75°C distilled water, to manufacture a high pure acarbose.

10 7. The purification process as claim 1, wherein the purity of ~~high~~ pure acarbose is large than 95% (wt/wt) used to treat diabetes.

8. A purification process for purifying the acarbose comprising the steps of:

15 eliminating mycelium from an acarbose-containing fermentation broth by centrifugation;

concentrating filtrate of the acarbose-containing fermentation broth to ~~be consistency by a concentration system;~~

~~adding adequate ethyl alcohol to the consistency and~~

5 blending to be a solution;

taking an upper liquid from the solution by centrifugating;

concentrating the upper liquid ~~to be a consistency by the concentrating system;~~

putting the consistency into ethyl alcohol to get ~~a~~

10 ~~consistency liquid;~~

taking a sediment from the consistency liquid by centrifugating and solving the sediment by water to get an impure acarbose solution;

blending a strongly cation exchange resin with the
15 acarbose solution to get a resin;

~~using sodium chloride solution to eliminate an impurity in~~

the resin;

using ammonia solution to eliminate an impurity in the
resin; and

solving the resin with ammonia solution to get a high pure
5 acarbose.

9. The purification process as claim 8, wherein the
eliminating mycelium from acarbose-containing
fermentation broth step could use a filter to replace
centrifugating.

10 10. The purification process as claim 8, wherein the purity of
high pure acarbose is 60%(wt/wt).

11. A purification process for manufacturing a high pure
acarbose comprising the steps of:

adjusting pH value of an impure acarbose;

15 adding an cation exchange resin into the impure acarbose
to get a solution;

blending the solution and taking an upper liquid;
adding a strong cation exchange resin into the upper liquid
to get a mixing solution;
mixing and shaking the mixing solution to make the strong
5 cation exchange resin absorbing acarbose;
using sodium chloride solution to eliminate an impurity in
the acarbose; and
using ammonia solution to elute the acarbose to get a high
pure acarbose.

10 12. The purification process as claim 12, wherein after the
adjusting pH value step adds a cation exchange resin
containing 250 mg sugars/g resin.

13. The purification process as claim 12, wherein after taking
the upper liquid adds a strong cation exchange resin
15 containing 80 mg sugars/mL.

14. The purification process as claim 12, wherein the purity of

high pure acarbose is up 78%.

15. A purification process for manufacturing a high pure acarbose comprising the steps of:

adjusting pH value of ~~an upper liquid from an impure~~

5 ~~acarbose~~ mixing a strong cation exchange resin;

passing the upper liquid through a strong cation exchange resin column ;

washing the strong cation exchange resin in the column by deionized water till the absorbance of strong cation exchange resin being zero or steady;

getting an impure acarbose by using ammonia solution to elute the strong cation exchange resin;

concentrating the acarbose-containing fractions to be a volume by a concentration system; and

15 using alcohol for extracting the impure acarbose to get a high pure acarbose.

16. The purification process as claim 16, wherein the flow velocity of passing the strong cation exchange resin column is 2.5 mL/min.

17. The purification process of claim 16, wherein the ammonia solution gradient of ammonia solution for eluting the impure acarbose is 0.5~1.5N.

18. The purification process as claim 16, wherein the purity of high pure acarbose is up 85%.

19. A purification process for manufacturing a high pure acarbose comprising the steps of:

?? *d* solving a powder of acarbose, which the purity is 83%~87%, by distilled water to be a solution;
adjusting pH value of the solution ;
passing the solution through α -amyloglucosidase column;
washing the α -amyloglucosidase column by using a times deionied water volume as the volume of the α

-amyloglucosidase column;

eluting an acarbose from the α -amyloglucosidase
column by distilled water;

concentrating the acarbose-containing fractions to be a
5 volume by a concentration system; and

using alcohol for precipitating the impure acarbose to get a
high pure acarbose.

20. The purification process of claim 20, wherein the flow
velocity of passing the α -amyloglucosidase column is 1.5
10 mL/min.

21. The purification process of claim 20, wherein the washing
the α -amyloglucosidase column step uses two times
deionized water volume as the volume of the α
-amyloglucosidase column.

15 22. The purification process of claim 20, wherein washing the
 α -amyloglucosidase column by deionized water step

changes the flow velocity of passing the α -amyloglucosidase column being 210nm till the absorbance of the α -amyloglucosidase is steady.

23. The purification process of claim 20, wherein solving an
5 impure acarbose from the α -amyloglucosidase column by distilled water, 65°C.
24. The purification process of claim 20, wherein the purity of the high pure acarbose is up 95%.